



TOWN OF MARSHFIELD MASSACHUSETTS

Harbor, Rivers and Waterways Management Plan Draft

*Prepared by:
Marshfield Waterways Committee*

Green Harbor: photo courtesy of Pat Traynor

Harbor, Rivers and Waterways Management Plan

Key steps in developing the plan:

- 1. Partnered with the team of professionals at Urban Harbors Institute, UMass Boston who provided the expertise and technical services for developing the plan.*
- 2. Held a series of public meetings to gain input directly from recreational and commercial users of Marshfield's waterways, waterfront and natural resources.*
- 3. Received guidance in the environmental, fisheries, marine, regulatory and technical fields from:*
 - Marshfield's Conservation Agent, Harbormaster, Waterways Committee Members and other Town Officials*
 - South Shore Regional Coordinator of Massachusetts Office of Coastal Zone Management*
 - Executive Director of the North and South Rivers Watershed Association*
 - Representative from the Division of Marine Fisheries*

Navigable Waterways

Marshfield has four waterways of importance to recreational boaters and recreational and commercial fishermen:

- **Green Harbor**
- **North River**
- **South River**
- **Massachusetts Bay and Cape Cod Bay within the jurisdictional limits of the town.**



Navigable Waterways – Issues

- **The Narrows at Green Harbor is subject to regular filling in with sediment which results in navigational and safety problems for recreational boats and commercial fishing vessels.**
- **Dredging is needed in parts of the North and South Rivers. Specific locations include the South River at the Sea Street Bridge and spots at the mouth of the North and South Rivers.**
- **A plan needs to be developed for maintenance dredging, including the beneficial reuse of dredged materials.**

Navigable Waterways – Goals and Objectives

Goal:

- Maintain Marshfield's waterways in a safe and navigable state for all users.

Objectives:

- Ensure adequate dredging to promote safe navigation.
- Develop a long term, cost-effective solution to improve safe navigation and reduce the frequency and severity of shoaling in Green Harbor.

Navigable Waterways – Recommendations

- **Create and update a long term maintenance dredging plan for all waterways.**
- **Immediately undertake dredging the Narrows at Green Harbor to a navigable depth of 8 feet for a width of 100 feet and maintain these dimensions by dredging as needed.**
- **Complete dredging of the South River to the split.**
- **Share all future costs for planning, permitting and dredging in the North and South Rivers equitably with towns that share the waterway.**

Navigable Waterways – Recommendations cont.

- **Petition the USACE to address the shoaling at the jetties due to their design and configuration, taking into consideration the studies conducted in 1980 and 1988.**
- **Continue sand management activities to reduce the impact of Aeolian sand transport in Green Harbor.**
- **Where feasible use a dredging method that would allow dredge spoil to be used for beach nourishment.**
- **Work with other relevant entities to complete an engineering and hydrodynamic study of the Brant Rock Dyke's effects on Green Harbor.**
- **Explore cooperative dredging efforts with other communities.**

Natural Resources

Marshfield is fortunate to have both coastal and inland waterways, natural beaches, good water quality, abundant marshes, active migratory fish passages and a healthy shellfish population.

Residents and visitors rely on these resources for recreational and commercial activities including fishing and shell fishing, boating, and swimming.



Natural Resources – Issues

- Boating: Use of the Town's waterways and nearshore areas may have impacts that are intensified/worsened when considered along with other uses of the nearshore areas or waterways.
- Shellfish and Shellfishing: Marshfield used to have abundant shellfish resources, and interest exists to rebuild those resources for commercial and recreational harvesting purposes and for water quality and shore stabilization purposes.
- Anadromous Fish: The Town's waterways have historically supported migratory fish spawning events, but some fish passages are now compromised by dams, poor water flow, and other impairments, affecting the ability of fish to spawn.

Natural Resources – Goals

- Conserve, protect and restore, where appropriate the valuable natural resources of Marshfield's shoreline, rivers and waterways.
- Develop a sustainable Shellfishery in all approved and conditionally approved Marshfield waterways.
- Improve habitat for migratory fish.

Natural Resources – Objectives

- Minimize the impact of coastal and water-based activities on natural resources.
- Encourage the local re-use of dredge sediment.
- Expand shell fishing locations and duration in Marshfield waterways.
- Ensure that shell fishing is done in a manner that does not deplete the resource or impair the habitat.
- Determine the potential for establishing shellfish aquaculture in the towns coastal waterways.
- Restore tributaries to support natural spawning events in Marshfield's tidal rivers.

Natural Resources – Recommendations

- Conduct a build-out analysis of docks and piers to understand the potential impacts of existing and additional docks and piers.
- Develop criteria for assessing applications for new or expanded docks in the Town's waterways.
- Ensure adequate and convenient pump-out facilities to prevent water quality impairments resulting from vessel-based waste.
- Require all facilities with a vessel pump-out to certify annually that the equipment is operational.

Natural Resources – Recommendations cont.

- **Work with the Department of Public Works, Conservation Commission, Coastal Advisory Committee, Beach Commission, Harbormaster and others to protect the Town's beaches and document and address beach nourishment needs.**
- **Take necessary measures to expand the duration and locations of shellfishing.**
- **Evaluate the potential for expanded commercial shellfishing.**
- **Conduct an independent scientific shellfish stock assessment to determine harvesting yield potential.**
- **Work with the Harbormaster, DMF, and the NSRWA to enhance shellfish populations through the expansion of seeding and relay activities, both for harvesting and for natural resource improvements.**

Natural Resources – Recommendations cont.

- **Explore the regulatory and technical opportunities and constraints and the benefits of shellfish aquaculture, including the use of upwellers.**
- **Work directly with the NSRWA and other partners to support efforts to improve migration in the key tributaries of the North & South Rivers and along the Green Harbor River.**

Public Access



The Town of Marshfield values and encourages recreational and commercial activities on town waterways, which are for the benefit and use of all residents.

Access to the coast and rivers can be challenging however, and at times public access sites lack appropriate amenities.

Public Access – Issues

- Access along the South River should be enhanced. Possibilities include a walkway in the downtown area, the addition of parking and seasonal floats at key locations.
- Public access along Joseph Driebeck Way is a concern. Physical and visual access could be enhanced via the development of a walkway or boardwalk.
- Additional launching sites for human propelled boats are needed, along with associated parking.
- Access to the Green Harbor River could be improved in conjunction with restoration efforts at Peter Igo Park.
- There are opportunities to increase access on the Town's waterways through the rental of canoes, kayaks, and stand-up paddle boards.
- Residents may come to appreciate their waterfronts and water-dependent activities in Town if they had better access.

Public Access – Goals and Objectives

Goal:

- Provide and promote public access points to Marshfield's waterways while maintaining a healthy ecology.

Objectives:

- Improve small boat (human-propelled) access to the Town's waterways.
- Promote small boat use on the Town's waterways.
- Increase public awareness of and participation in water-related events.



Public Access – Recommendations

- Improve existing launch facilities, including bathroom access and parking as appropriate.
- Identify new launch facilities, specifying the potential amenities each site might offer.
- Explore opportunities to improve recreational fishing access, including opportunities linked to State funds (e.g., MA DMF).
- Provide support and act as a liaison with town officials to organizations whose purpose it is to advocate for waterways access.
- Advertise and promote launch facilities by publishing a map of town landings and launch facilities.

Public Access – Recommendations cont.

- **Initiate a campaign to promote the North River as the only Designated Scenic Protected River in the Commonwealth of Massachusetts.**
- **Encourage the establishment of a kayak/canoe rental facility on the town's waterways. Explore the interest in and opportunities, benefits and liabilities of a publicly - vs. privately-operated facility.**
- **Increase the coastal and marine programming and events for residents and visitors.**
- **Develop, maintain, and promote a town calendar of water and beach related activities and events.**
- **Promote camping opportunities at specific river sites.**

Recreational Boating



Recreational boating is one of the town's most important economic and recreational resources.

The town's three "harbors", Green Harbor, South River and North River provide protected environments for shoreside boating facilities and vessel mooring.

Recreational Boating – Issues

- There is a concern that funding for the existing patrols on the North River may be cut.
- The “Spit” is a popular location for recreational boaters to congregate; but safety concerns are abundant. Increased patrols would require additional Town resources, and would benefit from coordination with Scituate.
- Speed is a concern on the South River. The area is currently patrolled by the Town, but additional patrols and/or boater education would be helpful.
- While pump-outs are available at the Town Pier, Green Harbor, and at private boating facilities and on the rivers, additional (and reliable) pump-out services are needed.
- The locations of existing docks are unmapped, and there is no sense of what the individual and cumulative impacts of those docks are, nor any sense as to what the potential build-out of docks might be.

Recreational Boating – Goals and Objectives

Goal:

- Support a safe and pleasurable recreational boating environment in Marshfield's navigable waters.

Objective:

- Provide signage, training and patrols to promote safe boating.

Recreational Boating – Recommendations

- **Work with the Harbormaster and Recreation Department to institute Town of Marshfield-sponsored Boating Safety training programs.**
- **Ensure proper and sufficient regulatory signs are in place in key locations to promote safe navigation.**
- **Increase law enforcement patrols to maintain the safe operation of recreational boats. Coordinate with Scituate in shared waters.**

Working Waterfronts

The Town's fishing fleet is important to Marshfield's economy and culture.

Beyond its direct and indirect economic benefits, the presence of the commercial fleet is an important factor in securing funding for maintenance dredging in Green Harbor.

Similarly, recreational boating and fishing support a variety of associated businesses and is an important economic driver for the community.



Working Waterfronts – Issues

- **Additional parking (or management arrangements) and facilities are needed to support the multiple commercial and recreational water-dependent uses of Green Harbor.**
- **The local fishing fleet does not have easy access to ice.**
- **The current configuration of North Pier is not ideal for fishermen. The pier is too high and there is unused space that could be made usable.**
- **With the filling in of the Narrows, access for fishing boats can become unreliable and may lead to unsafe conditions or the loss of time (and money) while waiting for passage to become safe.**

Working Waterfronts – Goals and Objectives

Goal:

- Support water-dependent uses and businesses for their economic benefit to the Town of Marshfield.

Objectives:

- Maintain the infrastructure necessary to support Marshfield's commercial fishing fleet and charter boat operations.
- Promote and support marine-based activities at the Town's working waterfronts.

Working Waterfronts – Recommendations

- **Explore the feasibility of providing reliable high-capacity ice service for commercial and recreational fishermen.**
- **Ensure that the public infrastructure and shoreside arrangements are identified and planned for in terms of current and future needs.**
- **Develop a branding strategy to promote Marshfield's local waterfront businesses (e.g., charter boat fishing industry).**
- **Create events for the public to become more aware of activities along the Town's waterfronts.**
- **Explore every opportunity to expand the use of Marshfield's working waterfronts to accommodate new uses and the growth of existing uses.**

Water Quality

Water quality is highly influenced by human activities – both on land and on the water.



The Town's waterbodies typically meet the State standards for swimming but sampling data taken by the NSRWA shows that the summertime water quality in the rivers is not suitable for shellfishing.

While swimming and shellfishing are the primary concerns related to water quality, boaters at Green Harbor Marina are dealing with a nutrient-rich foam resulting from the manipulation of the tide gates at the Green Harbor dike.

Water Quality – Issues

- Improvements in coastal water quality have been achieved, but the contributions of nonpoint sources need to be identified, assessed, and minimized.
- A protein-rich foam, generated at the dike, is impacting boaters in Green Harbor. The occurrence of the foam has been particularly noticeable during the 2013 summer, possibly related to heavy rainfall and a Conservation Commission project upstream of the dike. Initial efforts to keep the foam away from and off of boats have not been successful.

Water Quality – Goals and Objectives

Goal:

- Ensure that water quality and quantity is adequate to support healthy ecosystems and the various human uses of the Town's waterways.

Objectives:

- Improve coastal water quality testing and awareness of testing results.
- Promote water quality improvements.

Water Quality – Recommendations

- **Coordinate the synthesis and review of surface water quality testing information to identify and address potential sources of water quality impairment.**
- **Monitor the outcomes of the 2014 shellfish growing program to better understand the potential for growing shellfish to improve the estuarine ecosystem.**
- **Ensure adequate functioning pump-out facilities to minimize vessel-related water quality impairments. Conduct a survey of operability each year at the start of the boating season. Establish a program to promote use of pump outs.**

Water Quality – Recommendations cont.

- Work with the Conservation Commission, Green Harbor Marina, the Harbormaster and any other agencies or organizations to reduce impacts of foam to vessels docked at Green Harbor Marina.



Foam encroaching upon vessels at Green Harbor Marina (photo courtesy of Joe Galgana)

Administration / Finances

Marshfield's waterways related activities are managed and funded through a variety of mechanisms, including the Town's budget, Ramp and Mooring Fees, Vessel Excise Tax, a variety of Grants and the US Army Corps of Engineers.

The Town has established a Waterways Fund. The revenue in this fund may be used for (1) maintenance and improvements; (2) public access; (3) breakwaters, retaining walls, piers and moorings; (4) law enforcement and fire prevention.



Administration / Finances – Issues

- **The Town has experienced success in securing funding for dredging and waterfront improvements. These efforts need to continue along with pursuing options for stable sources of revenue dedicated to the waterways.**

Administration / Finances – Goals and Objectives

Goal:

- Ensure adequate and stable funding for waterfront and waterway activities.

Objectives:

- Pursue funding to support management of the Town's waterways and waterfronts.
- Ensure that the town is capturing all revenue to which it is entitled from the economic value that is generated from the town's waterways assets.

Administration / Finances - Recommendations

- Review, catalog, and assess the trends of existing sources of funding for harbor and waterways-related operations and capital improvements and increase efforts to secure new financial support, e.g., grants.
- Work with the Town to obtain a consolidated quarterly report of all Waterways income and expenses.
- Explore establishing a separate account for all user fees and other existing and future revenue sources attributed to Waterways operations.
- Explore the desirability and possibility of Waterways-related expenses being paid for by existing and future Waterways-related revenue.
- Work with the assessor's office and boating businesses to ensure the town is collecting excise taxes on boats in accordance with state law.

Collaboration

The goals and objectives of the Waterways Committee naturally intersect with many

Town committees and departments, as well as neighboring towns, state agencies and non-profit organizations.

Collaborative Development



The entities with which the Committee will most likely collaborate include: Beach Administrator, Coastal Advisory Committee, Conservation Commission, Department of Public Works, Department of Recreation, Energy Committee, Harbormaster, Planning Board, Scituate Waterways Commission, North and South Rivers Watershed Association, North River Commission, Massachusetts Bays National Estuary Program and Massachusetts Office of Coastal Zone Management.

Collaboration – Issues

- The North River is shared by the towns of Marshfield and Scituate. Addressing many of the issues along the North River (e.g., improving public access, dredging, monitoring, pump-outs, and shellfishing activities) will be enhanced by (if not require) the collaboration of Scituate.
- Greater coordination among local entities with interest in the Town's water resources (e.g., the North River Commission, the North and South Rivers Watershed Association, and the Town Department of Recreation) would improve stewardship and management.

Collaboration – Goals and Objectives

Goal:

- Communicate with other entities whose activities directly or indirectly impact the Town's waterways.

Objectives:

- Ensure regular meetings and outreach with other relevant organizations, committees, boards, and neighboring towns to improve management of the waterways and waterbodies.

Collaboration – Recommendations

- **Assign members of the Waterways Committee to represent the Committee to each town board or commission having overlapping responsibilities with the Committee.**
- **Invite representatives from other groups to attend Waterways Meetings of interest.**
- **Dedicate one Waterways Committee Meeting per year o gathering input from all waterways stakeholders on any and all waterways issues and concerns.**
- **Report annually to the Board of Selectmen on the progress of implementing the Town of Marshfield Harbor, Rivers and Waterways Management Plan.**
- **Develop an email contact list of organizations and businesses for use in informing stakeholders of Waterways Committee Activities.**
- **Coordinate with the Town of Scituate on activities impacting shared waterways.**

Climate Change / Sea Level Rise

Marshfield has already been part of at least three studies on sea level rise (Kleinfelder, 2013, Chase, et al., 2012; MAPC, 2011).



The potential economic and environmental impacts associated with sea level rise are significant, and will likely include:

- loss or migration of coastal natural resources.
- changes in species composition due to habitat loss.
- changes in the extent of flood zones.
- saltwater intrusion into groundwater resources.
- increased expenses to repair/upgrade infrastructure damage due to flooding.
- potential loss of revenue generated by recreational uses of the waterways.
- potential impacts to the commercial fishery due to loss of infrastructure.

Climate Change / Sea Level Rise – Issues

- There is increasing concern among coastal communities about the impacts from climate change and sea level rise, including changes in storm intensity and frequency. Nearshore areas of Town may be vulnerable to flooding because of their low elevation and or/sea walls in poor condition. The potential risk to life, property, and natural resources need to be better understood.

Climate Change / Sea Level Rise – Goals and Objectives

Goal:

- Prepare for changes in climate and sea level.

Objectives:

- Increase understanding of the impacts of local changes in sea level and climate.
- Protect existing and future waterfront infrastructure against sea level rise.

Climate Change / Sea Level Rise - Recommendations

- Work with; Coastal Advisory Committee, Town Planner, Conservation Agent, Massachusetts Division of Marine Fisheries, Massachusetts Office of Coastal Zone Management and others to explore impacts in the Town and the region.
- Work with other Town entities to make sure that Waterways Committee's interests are coordinated and represented in any appropriate climate change and sea level rise initiatives.



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Draft

Thank You!

North & South Rivers: photo courtesy of Pat Traynor